Ex Dg

Paper / Subject Code: 40423 / Surveying

SE(CIVIL) \ SEM IV \ R-19 \ SM-22 \ 14-12-22

Time: 3 Hours **Total marks: 80**

QP CODE: 10016320

NOTE:
i) Question No. 1 is compulsory.
ii) Attempt any three out of the remaining five questions.
iii) Figure to the right indicates full marks.
iv) Assume suitable data if required.

Q.1 Write notes on **any four** of the following questions. **20**
i.- Differentiate Prismatic and Surveyor compass
ii.- Characteristics of contour lines
iii.- Radial contouring.
iv.- Types of curves.
v.- Zero circle.

Q.2 A) The following consecutive readings were taken with a level and 4m levelling staff on a continuously sloping ground at common intervals of 30m. **10**
0.905(on A), 1.745, 2.345, 3.125, 3.725, 0.545, 1.390, 2.055, 2.955, 3.455, 0.595, 1.015,1.850, 2.655 and 2.945(on B)
The RL of A was 395.500. Calculate the RLs of different points and find the gradient of the line AB.

B) What are the difficulties faced in levelling? Explain. **10**

Q.3 A) An incomplete traverse stable is given below **10**

Line	Length(m)	Bearing
AB	100.0	?
BC	80.5	140^0 30'
CD	60.0	220^0 30'
DA	?	310^0 15'

Calculate the length of DA and bearing of AB.

B). Explain the working procedure of repetition and reiteration methods. **10**

Q.4 A) A tacheometer fitted with an analytic lens and having a multiplying constant of 100 was set up at R, which is an intermediate point on a traverse leg AB. The following reading were taken with the staff held vertically. **10**

Staff station	Bearing	Vertical angle	Intercept (m)	Axial hair reading(m)
A	40^0 35'	-4^0 24'	2.21	1.99
B	22^0 35'	-5^0 12'	2.02	1.90

Calculate the length AB and the level difference between A and B

B) Explain the principle and applications of EDM. **10**

Q.5 A) the following perpendicular offsets were taken from a chain line to a hedge **10**

Distance (m)	0	5	10	15	20	30	40	50	65	80
Offset(m)	3.40	4.25	2.60	3.70	2.90	1.80	3.20	4.50	3.70	2.80

Calculate the area by Trapezoidal rule and Simpson's rule.

B) Explain the principle of Plane table surveying. Discuss about its merits and demerits? **10**

Q.6 A) two straight lines AC and CB to be connected by a 3 deg curve, intersect at a chainage of 2,760 m. the WCBs of AC and CB are $45^0 30'$ and $75^0 30'$ respectively. Calculate all necessary data for setting out the curve by method of offsets from the long chord **10**

B) What is bearing? Describe the types bearing with necessary diagram. **5**

C) What is ranging? Explain the types of ranging. **5**

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